SEABED FEATURES IN RELATION TO GEOHAZARDS ON THE IONIAN CALABRIAN MARGIN: RESULTS FROM THE MAGIC PROJECT

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Abstract
These seabed dynamics of the Ionian Calabrian Margin are currently being examined in the context of the project MAGIC (Marine Geohazards along the Italian Coasts). Multibeam and shallow seismic data show that the seafloor within X km of the Calabrian coast is characterized by the presence of canyons, slump, slides, diapirs, mud volcanoes and cold seeps. The presence of these morphologies, indicative of ongoing processes of sediment transfer and fluid flow, makes this area particularly interesting in relation to assessments of seafloor geohazards.

Keywords: Ionian Sea, Continental Margin, Geomorphology

The Ionian Calabrian Margin (ICM, Fig.1) is a tectonically active convergent margin, the structures of which reflect two main processes: frontal compression and fore-arc extension during the SE advance of the Calabrian accretionary prism since the late Miocene[1]; and a rapid uplift (up to 1 mm/yr) of onshore and shallow shelf areas since the mid-Pleistocene [2]. The morphological expression of these processes at seabed is a broad, irregular seabed sediments identified on the sub-

Fig. 1. Bathymetric map of the Ionian Calabrian Margin

These seabed features reflect the tectonic evolution of the ICM. Geophysical data, such as multibeam bathymetry and high-resolution seismic profiles, reveal the presence of canyons, submarine slides, mud volcanoes, and cold seeps. These features are indicative of ongoing processes of sediment transfer and fluid flow. The ICM is characterized by a narrow shelf area that extends to depths of 2000 m. In the north, the slope is broad and dominated by shelf above depths of c. 150 m, above a slope of irregular morphology that extends to depths of c. 150 m. Hence, the ICM is characterized by the presence of canyons, slump, slides, diapirs, mud volcanoes and cold seeps. The presence of these morphologies, indicative of ongoing processes of sediment transfer and fluid flow, makes this area particularly interesting in relation to assessments of seafloor geohazards.

References